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ABSTRACT

The purpose of this research project at San Francisco State University was to develop and evaluate integrated assessment and intervention strategies to locate the "at risk" older driver and remediate deficits in knowledge or skills about driving and traffic safety. The identification of the "at risk" older driver should suggest appropriate, cost effective intervention points and procedures. The outcomes should be increased older driver mobility, driver safety, and increased traffic safety (i.e., reduced traffic accident and fatality rates) for all drivers and pedestrians. The effectiveness of a multi-phasic, programmatic approach to accident prevention was evaluated using a pretest-posttest control group design. Two hundred and fifty-four older drivers were screened to assess risk of accident. Those determined "at risk" continued in a classroom education program. If understanding of driving and traffic safety were not improved, driving simulation was used to remediate deficits. Results indicate that older drivers demonstrated improved attitudes and increased knowledge of driving and traffic safety but little change in skills when exposed to the three program phases individually. They demonstrated improved attitudes, increased knowledge and skills after exposure to the multi-phasic, programmatic approach, which was shown to be cost effective, particularly when delivered via the computer-based version. Appendix includes the Comprehensive Older Driver Assessment Program questionnaire. (Author/MSF)

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THE HEALTH, MOBILITY & SAFETY LAB AT SAN FRANCISCO STATE UNIVERSITY

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THE HEALTH, MOBILITY & SAFETY LAB AT SAN FRANCISCO STATE UNIVERSITY

Presented by:

Darlene Yee, Ed.D., CHES
Joseph F. Melichar, Ph.D.

WHAT IS THE ISSUE?

Transportation is a major facilitator between a person and his or her external environment. It determines whether the community functions as an inhibiting environment or as a supportive system. **Mobility** is one of the activities of daily living which enhances a person's quality of life.

The growing number of older adults comprise a **heterogeneous** population: some remain mobile, others do not. Research indicates that an **inverse relationship** exists between age and mobility; in other words, decreased mobility is associated with increased age.

The growth in the aging of the overall population translates to a simultaneous increase in the number of older drivers. Demographic trends show that the proportion of older drivers will continue to multiply. Approximately 33 million drivers age 55 and over constituted 22 percent of all drivers in 1987. **Today, older drivers represent 28 percent of the driving population** and will grow to **39 percent by the year 2000.**

"Being able to get where they want to go" is an important factor in the physical and psychological well-being of older adults. Surveys reveal that **driving** is how they prefer to maintain mobility. There is consensus among traffic safety authorities that older drivers should be kept on the roadways as long as they can **drive safely**. No one seriously concerned with traffic safety wants to use chronological age as the sole indicator of driving ability.

WHAT IS THE PROBLEM?

While many drivers age 55 and over have commendable driving records, as a group, when exposure is considered, they are **disproportionately involved in traffic accidents and fatalities.** On the basis of miles driven, older drivers are involved in fatal crashes more frequently than any other age group except teenaged drivers. In addition, older drivers are **more likely to be hospitalized** as a result of their injuries sustained in traffic accidents than their younger counterparts; those who survive **tend**

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to recover very slowly.

One of the main problems facing older drivers stems from the **decline of some of the performance skills** necessary for safe driving: 1) sensing the situation, 2) deciding what to do, and 3) acting quickly. Various age-related visual, auditory, and psychomotor changes have an **adverse effect** on driving ability.

Moreover, there are conditions and situations involving the **traffic mix**-- drivers, automobiles, highways-- that should be dealt with in order for older drivers to function safely, and thus maintain the mobility and independence so important for their physical and psychological well-being.

Losing one's driving privilege, voluntarily or otherwise, is probably second only to total confinement in its **effect on lifestyle, access to benefits of society, and general well-being.** This is particularly true for older drivers in our automobile-oriented society.

WHAT IS THE SOLUTION?

Social learning theory suggests that when people understand the reason some restrictive action must be taken against them, and are told the specific steps by which they might be able to overcome the restriction, they are more willing to accept it than if it is imposed by an external authority. The license of an older driver often is essential to his or her independence and well-being. **Every opportunity should be taken to insure that the older driver is made aware of impairments and of what action can be taken to overcome them.** When a person thinks he or she can do something about an impairment, that person is more likely to try to do something about it.

The **Health, Mobility and Safety Laboratory** was established as an academic auxiliary unit at **San Francisco State University** to enhance the health, mobility and safety of interested members of the campus community and its environs, with an emphasis upon state, regional and national dissemination, through education, research, service and training activities. The HMS Lab will further and/or support collaborative, inter-disciplinary efforts of academic programs on driver, in-home and pedestrian safety issues.

HMS LAB STAFF:

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APPENDIX A

ABSTRACT

"ACCIDENT PREVENTION THROUGH DRIVING SKILLS ASSESSMENT AND INTERVENTIONS FOR OLDER DRIVERS: A PROGRAMMATIC RESEARCH PROJECT" by Darlene Yee, Ed.D., CHES, San Francisco State University, and Joseph F. Melichar, Ph.D., Adaptive Systems Corporation.

The increase in the aging of the overall population has entailed a simultaneous increase in the number of older drivers. Drivers age 55 and over constitute 28% of all drivers today-- 39% by the year 2000. While many older drivers have commendable driving records, as a group, when exposure is considered, they are disproportionately involved in traffic accidents and fatalities. As individuals age, their functional capabilities and skills may change and require adjustments in their driving activities. For older adults to maintain their mobility and safety in an automobile-oriented society, they must sustain essential driving attitudes, knowledge and skills throughout these age-related changes.

The purpose of this research project was to develop and evaluate integrated assessment and intervention strategies to locate the "at-risk" older driver and remediate any deficits in knowledge or skills about driving and traffic safety. The impact of any assessment and/or intervention is accomplished when it is done cost-effectively, over a wide population, and with small numbers of false positives and negatives. To this end, the identification of the "at-risk" older driver should suggest appropriate intervention points and procedures. The outcomes should be increased older driver mobility, increased older driver safety, and increased traffic safety (i.e. reduced traffic accident and fatality rates) for all drivers and pedestrians.

The effectiveness of a multi-phasic, programmatic approach to accident prevention and injury control for older drivers was evaluated using a pretest-posttest control group design. This approach, consisting of three levels of interventions (assessment, education, and training) within a filter model, was evaluated to determine effectiveness in relation to cost. Level 1 used a proven screening instrument to assess the older driver's increased risk of accident followed by a simple intervention that provided information on those areas identified as problematic. Older drivers screened "at-risk" in Level 1 continued in a classroom education program (Level 2) developed specifically for older adults. Each level included internal assessments to determine how well the older driver performed. An assessment within Level 2 evaluated if the older adult's skills and understanding of driving and traffic safety have improved. If not, a third training method, driving simulation (Level 3), was used to remediate deficits.

Data was collected from a sample of 254 older drivers in three states (California, Maryland, and Texas) using the Melichar-Yee Comprehensive Older Driver Assessment (MY-CODA) Program (to obtain

background information), Attitudes Assessment Test (AAT, pre and post-tests), Knowledge Assessment Test (KAT, pre and post-tests), and Melichar-Yee Driver Assessment Profile (MY-DAP) Form (to obtain skills information). To reduce the costs of service delivery, the information generated was used to develop specifications for new computer-based training (CBT) modules for dissemination and utilization in driver improvement programs.

Results of this research project indicate that:

1) older drivers demonstrated improved attitudes on driving and traffic safety after exposure to the Older Driver Self-Assessment Inventory (ODSAI) (Level 1);
2) older drivers demonstrated increased knowledge on driving and traffic safety after exposure to the Older Driver Improvement Program (ODIP) (Level 2);
3) older drivers demonstrated little change in skills on driving and traffic safety after exposure to the Older Driver Simulation Program (ODSP) (Level 3);
4) older drivers demonstrated improved attitudes, increased knowledge and skills on driving and traffic safety after exposure to the multi-phasic, programmatic approach linking the ODSAI, ODIP and ODSP (Levels 1, 2 and 3);
5) the multi-phasic, programmatic approach showed increased cost-effectiveness over any single approach; and
6) the computer-based version of this approach showed decreased cost of delivery without loss of information delivery.

It can be concluded that older adults need and want comprehensive information concerning their driver performance. This information should suggest what older drivers can do for themselves as well as what other people can do for them through innovations in accident prevention and injury control programs. Specifically, the multi-phasic, programmatic approach of assessment and intervention enables differentially matching the level of intervention to the specific needs of the older driver. Primary prevention, secondary screening, and tertiary treatment correspond to older driver self-assessment (Level 1), older driver improvement program (Level 2), and older driver simulation program (Level 3). By linking these levels of interventions, this unique approach has the potential to promote and reinforce mobility and safety for older drivers.

NOTE: We would like to gratefully acknowledge the support that we received from: AARP Andrus Foundation; AAA Foundation for Traffic Safety; AARP's 55 ALIVE/MATURE DRIVING Program; DORON Precision Systems; San Francisco State University, Maryland Focus Group, and Texas Department of Health.

APPENDIX B

BIRTH DATE: _____

COMPREHENSIVE OLDER DRIVER ASSESSMENT (CODA) PROGRAM*

ADMINISTRATION INFORMATION

Agency #:_____ Site #: _____ Subject #: _____

Date: ____/____/____ Interviewer #: _____

INTRODUCTION

The increase in the aging of the overall population has entailed a simultaneous increase in the number of older drivers. Drivers age 55 and over constitute 28% of all drivers today-- 39% by the year 2000. While many older drivers have excellent driving records, as a group, when exposure is considered, they are disproportionately involved in traffic accidents and fatalities.

Accident prevention and injury control emphasize the development of individual and community measures to protect against accidents and their harmful consequences. The purpose of this program is to identify the at-risk driver age 55 and over, and remediate any deficits in knowledge or skills about driving and traffic safety.

While your help in answering questions contained in this survey is completely voluntary, it is important that you try to answer all the questions. Please read each question carefully and mark an [X] in only one box for each question except where otherwise indicated. Please ask for help if you do not understand the instructions or any question.

All of the information which you provide will be kept anonymous and confidential. No names are necessary. When you have completed this survey, please return it to us as directed. Thank you for your help and time in the successful completion of this program.

* This program is sponsored by a grant from the AARP Andrus Foundation.

---- ANONYMOUS AND CONFIDENTIAL ----

DEMOGRAPHIC INFORMATION

1. Your age? _____

2. Birth date? ___/___/___

3. Your sex? [ ] Female
[ ] Male

4. Your current marital status?
[ ] Never Married
[ ] Now Married
[ ] Widowed
[ ] Separated
[ ] Divorced
[ ] Other: _____

5. Ethnicity/Race?
[ ] Asian
[ ] Black
[ ] Hispanic
[ ] Native American
[ ] White
[ ] Other _____

6. Your highest level of education?
[ ] Elementary School
[ ] Junior High School
[ ] High School
[ ] Technical or Vocational School
[ ] Junior College or Some College
[ ] College
[ ] Graduate School

7. What is the zip code where you live? _____

8. Community in which you live? [ ] Rural [ ] Suburban [ ] Urban

9. With whom do you live?
[ ] No one [ ] Spouse [ ] Children
[ ] Other Relatives [ ] Friend [ ] Other: _____

10. What is your current employment status?
[ ] Working part-time for pay
[ ] Working full-time for pay
[ ] Not working, but looking for paid work
[ ] Retired and/or not working for pay

11. What is (or was) your principal occupation?
[ ] Professional/Managerial [ ] Manual/Industrial Worker
[ ] Clerical/Office Worker [ ] Salesperson
[ ] Skilled/Technical Worker [ ] Other: _____

12. When you last worked (or if you still do), how many miles did (do) you travel round trip to your place of employment?
[ ] 0-10 [ ] 11-20 [ ] 21-30 [ ] 31-40 [ ] 41 or more

13. By what means did (do) you travel to work? (Check all that apply)
[ ] Car or Car Pool [ ] Taxi [ ] Bus
[ ] Train or Subway [ ] Bicycle [ ] Walk [ ] Other: _____

14. What was your total annual income (all sources including social security) for you (and your spouse, if married) for the last year?
[ ] $ 0 - 4,999 [ ] $20,000 - $29,999
[ ] $ 5,000 - 9,999 [ ] $30,000 - $39,999
[ ] $10,000 - 19,999 [ ] $40,000 or more

15. Which of these statements best describes your financial situation?
[ ] My bills are no problem to me, I have excess savings
[ ] My bills are no problem to me, I have a balanced account
[ ] My expenses make it difficult to pay my bills
[ ] My expenses are so heavy that I cannot pay my bills

DRIVER HISTORY

16. Did you complete a classroom driver education course or in-car driver training course before taking your driver's licensure examination? [ ] No [ ] Yes, classroom course only
[ ] Yes, in-car course only
[ ] Yes, classroom and in-car courses

17. How difficult was it for you to obtain or renew your driver's license? [ ] Very [ ] Somewhat [ ] Not very [ ] Not at all

18. Do you now have a valid driver's license? [ ] Yes [ ] No

19. How many years have you been licensed to drive an automobile?
[ ] Never licensed to drive
[ ] Not now licensed to drive
[ ] Less than 1 year
[ ] More than 1 year. Please specify the number of years: _____

20. How many automobiles do you and/or other members of your household own? [ ] None [ ] One [ ] Two [ ] Three or more

21. Do you have fender scrapes, door gouges or dents that are a result of your driving?
[ ] None [ ] One [ ] Two [ ] Three or more

22. How many tickets have you received in the past two years for moving traffic violations?
[ ] None (SKIP to #24) [ ] One [ ] Two [ ] Three or more

23. What were your violations for? (Check all that apply)
[ ] Failure to yield [ ] Going too slowly
[ ] Not heeding traffic lights [ ] Not heeding traffic signs
[ ] Improper passing [ ] Improper turning
[ ] Reckless driving [ ] Speeding
[ ] Tailgating [ ] Other: _____

24. How many times have you been arrested for driving while intoxicated (DWI)?
[ ] None [ ] One [ ] Two [ ] Three or more

25. How many accidents have you been involved in as the driver of an automobile within the past two years?
[ ] None (SKIP to #30) [ ] One [ ] Two [ ] Three or more

26. What was the dollar amount of the damage that was done to your car in the **most expensive** of these accidents? $ _____

27. How were you involved in this accident as the driver?
[ ] Was hit by a moving vehicle [ ] Hit a pedestrian
[ ] Hit a moving vehicle [ ] Hit a stationary object
[ ] Ran off the road [ ] Other: _____

28. Were you wearing your seatbelt in this accident? [ ] Yes [ ] No

29. As a result of this accident, did you or a passenger in your car receive medical treatment? (Check all that apply)
[ ] Yes, I received treatment
[ ] Yes, a passenger in my car received treatment
[ ] No one received treatment

30. How many automobile insurance claims have you made in the past two years? [ ] None [ ] One [ ] Two [ ] Three or more

31. How many automobile insurance claims have been made against you in the past two years?
[ ] None [ ] One [ ] Two [ ] Three or more

32. Have you ever had your automobile insurance canceled or had to seek an alternate insurance carrier? [ ] Yes [ ] No

33. Whether or not you now own an automobile, do you have easy access to one? [ ] Yes [ ] No

DRIVING PATTERN

34. How many miles have you driven in the **past year**? _____ miles

35. How often do you drive an automobile?
[ ] Every day [ ] Every other day
[ ] Once or twice a week [ ] Once or twice a month
[ ] Rarely [ ] Not at all

What percent of your driving is done at the following times?

36. During rush hour: _____%

37. During the day other than rush hour: ____%

38. From dusk until mid-night _____%

39. From mid-night until dawn: _____%

40. How fast do you usually drive in comparison with the general flow of traffic?
[ ] Much faster [ ] Somewhat faster [ ] About the same
[ ] Somewhat slower [ ] Much slower

41. When driving during the day, how often do you pass other cars?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

42. How often do you find yourself failing to see signs and other road markings?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

43. Whether you are a driver or a passenger, check the **three** main purposes for which you use an automobile:
[ ] Never use an automobile
[ ] Grocery and other shopping [ ] Getting to and from work
[ ] Health care services [ ] Going to church
[ ] Getting to appointments [ ] Attending meetings
[ ] Visiting friends/relatives [ ] Volunteer activity
[ ] Other: _____

44. When your car isn't used for long (more than one day) trips, why not?
[ ] Not applicable, car is used for long trips
[ ] Uncomfortable [ ] Too tiring
[ ] Too expensive [ ] Car may break down
[ ] Other: _____

45. How often do you use your inside rearview mirror?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

46. How often do you use your driver side view mirror?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

47. How often do you use your passenger side view mirror?
[ ] Do not have one
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

48. How often do you wear your seatbelt when you are the driver of an automobile?
[ ] Always (SKIP to #50)
[ ] Most of the time [ ] Sometimes [ ] Seldom [ ] Never

49. When you don't wear your seatbelt as the driver, why not? (Check all that apply)
[ ] Passenger(s) doesn't [ ] I forget about it
[ ] Too hard to put on [ ] Inconvenient
[ ] Uncomfortable [ ] Don't have them
[ ] Don't need them [ ] Other: _____

50. How do you usually check to the rear? (Check all that apply)
[ ] Use driver outside view mirror
[ ] Use driver inside view mirror
[ ] Turn and look back
[ ] I rarely check to the rear
[ ] Other: _____

51. How often do you wear your seatbelt when you are a passenger in an automobile?
[ ] Always (SKIP to #53)
[ ] Most of the time [ ] Sometimes [ ] Seldom [ ] Never

52. When you don't wear your seatbelt as a passenger, why not? (Check all that apply)
[ ] Driver doesn't
[ ] Too hard to put on
[ ] Uncomfortable
[ ] Don't need one
[ ] I forget about it
[ ] Inconvenient
[ ] Don't have one
[ ] Other: _____

53. What alcoholic beverages do you usually drink? (Check all that apply)
[ ] None (SKIP to #59) [ ] Beer [ ] Wine [ ] Hard liquor

54. How often do you drink alcoholic beverages?
[ ] More than once daily
[ ] Every day
[ ] Every other day
[ ] Once or twice a week
[ ] Once or twice a month
[ ] Rarely

55. When you drink, how many drinks do you usually have?
[ ] One [ ] Two [ ] Three [ ] Four or more

56. Do you drive soon after you have been drinking?
[ ] Never (SKIP to #59)
[ ] Seldom [ ] Sometimes [ ] Frequently

57. How soon after drinking do you usually drive?
[ ] Less than 1/2 hour
[ ] 2 to 4 hours
[ ] after 8 hours
[ ] 1/2 to 2 hours
[ ] 4 to 8 hours

58. In which way do you notice the most difference in the way you drive after drinking?
[ ] No difference
[ ] I drive slower
[ ] I make more mistakes
[ ] I avoid driving at night
[ ] I do not pass other cars as often
[ ] Other: _____

59. How long were you or have you been the principal driver of the automobile in your family?
[ ] Never
[ ] Less than 1 year
[ ] More than 1 year. Please specify the number of years: _____

60. Who usually rides with you when you drive? (Check all that apply)
[ ] No one [ ] Spouse [ ] Children
[ ] Other relatives [ ] Friend
[ ] Other: _____

61. How do you feel about having passengers when you drive?
[ ] Prefer [ ] Don't mind [ ] Dislike [ ] Not applicable

62. Who usually drives for you if you do not drive yourself?
[ ] No one [ ] Spouse [ ] Children
[ ] Other relatives [ ] Friend
[ ] Other: _____

63. How often do you use public transportation?
[ ] Every day [ ] Every other day
[ ] Once or twice a week [ ] Once or twice a month
[ ] Rarely [ ] Not at all

64. In which **two** ways do you prefer to get around?
[ ] Drive myself [ ] Have someone drive me
[ ] Use public transportation [ ] Taxi
[ ] Senior services [ ] Bicycle
[ ] Walk [ ] Other: _____

65. Five years from now, how often do you think you will have a need for an automobile as a driver or a passenger?
[ ] Every day [ ] Every other day
[ ] Once or twice a week [ ] Once or twice a month
[ ] Rarely [ ] Not at all

DRIVER PERFORMANCE

66. How would you describe your eyesight (with glasses or contact lenses, if normally worn)?
[ ] Excellent [ ] Good [ ] Fair [ ] Poor

67. Does your driver license require that you wear glasses or contact lenses? [ ] Yes [ ] No

68. Do you wear glasses or contact lenses for seeing in the distance?
[ ] Yes [ ] No

69. Do you wear glasses or contact lenses for reading?
[ ] Yes [ ] No

70. Do you have any of these visual problems? (Check all that apply)
[ ] Cataract [ ] Glaucoma [ ] Color blindness
[ ] Night blindness [ ] Tunnel vision [ ] None of the above
[ ] Other: _____

71. Do you have difficulty reading traffic signs or signals before you are too close for them to do any good?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

72. For traffic signs (highway or street), do you have difficulty with their: (Check all that apply)
[ ] Size [ ] Shape [ ] Colors
[ ] Clarity of lettering [ ] Message [ ] No difficulty

73. On which roads do you have great difficulty with traffic signs? (Check all that apply)
[ ] Interstate highways (freeways) [ ] Freeways through cities
[ ] 2-lane rural roads [ ] City streets
[ ] None of the above

74. Can you see far enough ahead on 2-lane rural highways to take the curves and stay safely on the road?
[ ] Most of the time [ ] Sometimes [ ] Seldom [ ] Never

75. On your last long trip (1,000 miles or more) along unfamiliar highways, how many times did you miss a sign (destination or route guidance) and take a wrong turn?
[ ] Never [ ] 1 - 2 times [ ] 3 - 4 times
[ ] 5 - 6 times [ ] 7 times or more

76. Do you wear a hearing aid? [ ] Yes [ ] No

77. How would you describe your hearing (with hearing aid, if normally worn)?
[ ] Excellent [ ] Good [ ] Fair [ ] Poor

78. How often do you "nod off" when you are driving an automobile?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

79. Have you ever blacked out from any of your medical problems while driving?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

80. Does your doctor or pharmacist tell you when prescribed drugs may affect your driving?
[ ] Yes [ ] No
[ ] I do not take prescribed drugs (SKIP to #82)

81. Do any of your prescribed drugs make it more difficult for you to drive?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

82. Do you have difficulty entering or leaving high speed interstate highways (freeways)?
[ ] Always [ ] Most of the time [ ] Sometimes
[ ] Seldom [ ] Never

83. Which if any of the following joints create difficulty when you drive: (Check all that apply)
[ ] Hip [ ] Knee [ ] Ankle [ ] Shoulder
[ ] Elbow [ ] Wrist [ ] Fingers [ ] Toes
[ ] None of the above

84. How often does a painful or stiff joint interfere with your ability to drive?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

85. Do you require that a car be equipped with an automatic transmission because of weak, painful or stiff lower extremity joints?
[ ] Yes [ ] No

86. Do you require that a car be equipped with power steering because of weak, painful or stiff upper extremity joints?
[ ] Yes [ ] No

87. How difficult is it for you to get into and out of your own car or cars of people you ride with?
[ ] Very difficult [ ] Somewhat difficult
[ ] Not very difficult [ ] Not at all difficult

88. Do you experience any discomfort or pain when sitting in the driver's seat for a long period of time?
[ ] Yes [ ] No

89. How difficult is it for you to turn your head to look back over your shoulder when driving or backing up?
[ ] Very [ ] Somewhat [ ] Not very [ ] Not at all

90. Do you have any trouble seeing or reading the gauges on your instrument panel?
[ ] Yes [ ] No

91. How valuable do you consider a clear center line road marking?
[ ] Very [ ] Somewhat [ ] Not very [ ] Not at all

92. Do you have any trouble reaching, using or working any of these car parts? (Check all that apply)
[ ] Seatbelt [ ] Dashboard driving controls
[ ] Accelerator [ ] Air conditioning/heater controls
[ ] Brakes [ ] Radio controls
[ ] Horn [ ] Gear shift - transmission
[ ] Turn signal lever [ ] Windshield washer/Wiper
[ ] 4-way flasher [ ] Other: _____

93. Do you have difficulty controlling any of the following emotions while driving? (Check all that apply)
[ ] Anger [ ] Anxiety [ ] Frustration
[ ] Impatience [ ] Other _____ [ ] None of the above

94. Do you have trouble with any of the following while driving? (Check all that apply)

[ ] Sensing information
[ ] Processing information
[ ] Solving problems
[ ] Deciding what to do
[ ] Executing decisions
[ ] Physical endurance
[ ] Other: _____
[ ] None of the above

Please indicate whether your driving ability, for each condition below, is better, about the same, or worse than 5 years ago. Mark an [X] in the appropriate box:

	Doesn't Apply	Better	Same	Worse
95. Night driving				
96. Headlight glare				
97. Winter driving				
98. Rain and fog				
99. Snow, sleet or slush				
100. Interstate(freeway) driving				
101. City streets				
102. Rush hour driving				
103. When tired or upset				
104. After drinking				
105. After medication				
106. Holiday/vacation driving				
107. Going up/down steep hills				
108. Driving around curves				
109. Long-distance driving				

110. When did you last read the driver's manual for your state?

[ ] Never have read it
[ ] In the last 2 years
[ ] In the last 6 months
[ ] In the last 3 years
[ ] In the last year
[ ] 4 or more years ago

111. How well informed are you about the current rules and regulations in your state?
[ ] Very well informed [ ] Not very well informed
[ ] Fairly well informed [ ] Not at all informed

112. When did you last attend a driver education, training or retraining course?
[ ] Never [ ] 1 - 2 years ago
[ ] Less than 6 months ago [ ] 3 - 4 years ago
[ ] 6 - 11 months ago [ ] 5 years or more ago

113. In comparison to yourself **two years ago**, how is your ability to see when you are in traffic?
[ ] Much better [ ] Better [ ] About the same
[ ] Worse [ ] Much worse

114. In comparison to yourself **two years ago**, how is your ability to hear when you are in traffic?
[ ] Much better [ ] Better [ ] About the same
[ ] Worse [ ] Much worse

115. In comparison to yourself **two years ago**, have you noticed that your judgment out on the road(e.g. when to pass or stay in lane) is:
[ ] Much better [ ] Better [ ] About the same
[ ] Worse [ ] Much worse

116. In comparison to yourself **two years ago**, how is your ability to steer the automobile?
[ ] Much better [ ] Better [ ] About the same
[ ] Worse [ ] Much worse

117. In comparison to yourself **two years ago**, how is your reaction time in braking?
[ ] Much better [ ] Better [ ] About the same
[ ] Worse [ ] Much worse

ENVIRONMENT

Do you feel safe...

118. in you own home during the day?..... [ ] Yes [ ] No

119. in your own home at night?..... [ ] Yes [ ] No

120. outside your home during the day?.... [ ] Yes [ ] No

121. outside your home at night?..... [ ] Yes [ ] No

Please indicate how you rate the following characteristics of your environment. Mark an [X] in the appropriate box:

	Excellent	Very Good	Good	Fair	Poor
122. Convenient for shopping					
123. Near grocery stores					
124. Convenient for visitors					
125. Near medical services					
126. Public transit					
127. Access to public transit					
128. Safety					
129. Neighbors					

MOBILITY

130. Could you live where you do without owning and driving an automobile, or having someone drive you? [ ] Yes [ ] No

131. Do you leave your home?
[ ] Regularly [ ] Rarely
[ ] Occasionally [ ] Only with assistance

132. Do you leave your neighborhood?
[ ] Regularly [ ] Rarely
[ ] Occasionally [ ] Only with assistance

133. Do you drive a car?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

134. Are you able to use public transportation? [ ] Yes [ ] No

135. Do you use any of the following as an aide for walking?
[ ] Cane [ ] Walker [ ] Wheelchair
[ ] Other _____ [ ] None of the above

FAMILY AND FRIENDS

136. Do you have a close confidant? [ ] Yes [ ] No

137. How many times a week on average do you visit friends? _____

138. How many times a week do friends visit you? _____

139. How many hours during the week do you talk to friends on the telephone? _____

140. How many times a week do you go out with a friend? _____

141. How many close friends do you have? _____

142. How many living children do you have? _____

143. How many living siblings do you have? _____

144. How many other family members do you have? _____

145. How many close members of your family do you have? _____

146. For the close family members who do not live with you, how often do you talk with them on the telephone each week?
_____ times for _____ hours ____ minutes per week

147. How often do you visit with your close family members?
_____ times each [ ] week [ ] month [ ] year for a total of _____ days _____ hours

148. What is the distance, in time, to the nearest close relative?
_____ hours _____ minutes

149. If you were ill or incapacitated, how often could you expect help from your family or friends:
[ ] Always [ ] Most of the time [ ] Sometimes
[ ] Seldom [ ] Never [ ] Other _____

150. Is driving important to maintaining the contact and support of friends and family?
[ ] Always [ ] Most of the time [ ] Sometimes
[ ] Seldom [ ] Never [ ] Other _____

151. Do your depend upon hired help to assist you with the various activities of daily life?
[ ] Yes [ ] No

ACTIVITIES

Indicate how often you do the following activities...	0 x/yr	1-2 x/yr	1-2 x/mo	1-2 x/wk	3+ x/wk
152. go to a senior center?					
153. attend church?					
154. attend club meetings?					
155. go to the movies?					
156. attend sporting events?					
157. participate in general sports?					
158. participate in aerobic sports?					
159. play cards with others?					
160. garden?					
161. work on a hobby or hobbies?					
162. paint or play music?					
163. eat in restaurants?					
164. baby sit?					
165. visit away from your immediate neighborhood?					
166. take vacations away from home?					
167. entertain out-of-town guests or visitors?					
168. do volunteer work?					

169. Did you vote in the last presidential election?
[ ] Yes [ ] No

WELL-BEING AND OUTLOOK

Please answer the following questions...	YES	SOME-TIMES	NO
170. Is your daily life full of things that interest you?			
171. Have you at times very much wanted to leave your home?			
172. Does it seem that no one understands you?			
173. Are you happy most of the time?			
174. Do you feel weak all over much of the time?			
175. Is your sleep fitful and disturbed, or do you suffer from insomnia?			
176. Do feel nervous or tense?			
177. Do you have any major fears?			
178. Do you ever feel severely depressed?			
179. Do you ever have suicidal thoughts?			

180. Taking everything into consideration, how would you describe your satisfaction with your life at the present time?
[ ] Excellent [ ] Very Good [ ] Good [ ] Fair [ ] Poor

HEALTH INDICATORS

181. Does your health stand in the way of things you want to do?
[ ] Frequently [ ] Sometimes [ ] Seldom [ ] Never

During the **last six months**...

182. How **many days** were you unable to do your activities because of illness?	
183. How many **days** were you confined to your bed because of illness?	
184. How many **days** were you confined to nursing home or other non-hospital care facility?	
185. How many **days** were you confined to a hospital?	
186. How many **visits** did you make to a doctor?	

Rate your overall health now	Excellent	Very Good	Good	Fair	Poor
187. At the present time					
188. Compared to 1 year ago					
189. Compared to 5 years ago					
190. Compared to peers now					

Do you ever	No	Rarely	Sometimes	A Lot	Always
191. Experience confused memory?					
192. Experience confusion with time?					
193. Experience confusion with where you are?					
194. Get confused while you are talking?					

Please indicate whether you have any of the following conditions then indicate whether your activities, for each of these conditions, is restricted a lot, somewhat restricted, or not restricted. Mark an [X] in the appropriate box:

Health condition/problem	Yes	Restriction		
		None	Somewhat	A Lot
195. Arthritis/Joint Pain				
196. Bladder or Kidney				
197. Breathing or Lung				
198. Circulation				
199. Diabetes				
200. Glandular/Thyroid				
201. Heart Trouble				
202. Hypertension				
203. Low Blood Sugar				
204. Memory				
205. Multiple Sclerosis				
206. Parkinson's Disease				
207. Stroke				
208. Other_____				

ADMINISTRATION INFORMATION

Agency #:_____ Site #: _____ Subject #: _____

Date: ____/____/____ Interviewer #: _____ [X] Pre [ ] Post

ATTITUDES ASSESSMENT

1. Do you think a driver's license is a privilege or a right granted to all qualified individuals?
   [ ] It is a right [ ] It is a privilege [ ] I don't care which

2. What do you think about the national maximum speed limit of 55 miles per hour?
   [ ] It is just right
   [ ] It should be increased
   [ ] It should be decreased

3. Do you think it is safe to drive way below the posted speed limit (e.g. 40 MPH in a 55 MPH zone)?
   [ ] Yes [ ] No

4. Do you believe traffic accidents are mainly:
   [ ] under your control
   [ ] due to chance or luck
   [ ] due to circumstances beyond your control

5. Would you be willing to take a driver education, training or retraining course?
   [ ] Yes [ ] No

6. The judgmental abilities of drivers aged at least 55 tend to be poorer than those of drivers below age 40.
   [ ] Strongly agree [ ] Slightly agree
   [ ] Neutral
   [ ] Slightly disagree [ ] Strongly disagree

7. The reaction time of most drivers aged at least 55 tends to be slower than the reaction time of drivers below age 40.
   [ ] Strongly agree [ ] Slightly agree
   [ ] Neutral
   [ ] Slightly disagree [ ] Strongly disagree

8. It is almost impossible for drivers aged 55 and over to learn and use anything new to improve traffic safety.
   [ ] Strongly agree [ ] Slightly agree
   [ ] Neutral
   [ ] Slightly disagree [ ] Strongly disagree

9. In comparison to yourself five years ago, are you a:
[ ] Better driver [ ] About the same [ ] Worse driver

10. Five years from now, do you believe you will be a:
[ ] Better driver [ ] About the same [ ] Worse driver

11. At about what age do you estimate you would no longer wish to drive an automobile?
[ ] 55 - 59 years [ ] 60 - 64 years [ ] 65 - 69 years
[ ] 70 - 74 years [ ] 75 - 79 years [ ] 80 - 84 years
[ ] 85 - 89 years [ ] 90 years or more

12. At about what age do you estimate you would no longer be able to drive an automobile safely?
[ ] 55 - 59 years [ ] 60 - 64 years [ ] 65 - 69 years
[ ] 70 - 74 years [ ] 75 - 79 years [ ] 80 - 84 years
[ ] 85 - 89 years [ ] 90 years or more

13. Who should make the decision about when it is time to give up driving? (Check all that apply)
[ ] Driver himself/herself [ ] Family member(s)
[ ] Doctor(s) [ ] Motor vehicle department
[ ] Police department [ ] Other: _____

14. Is age alone a good basis for determining when it is time to give up driving?
[ ] Yes [ ] No

15. If not, what other things should be considered? (Check all that apply)
[ ] Driver's health [ ] Accident record
[ ] Need for mobility [ ] Other available transportation
[ ] Other: _____

16. At what age do you think older drivers should be required to renew their licenses through reexamination?
[ ] No specific age requirement
(same re-examination requirements as for younger drivers)
[ ] 55 - 59 years [ ] 60 - 64 years [ ] 65 - 69 years
[ ] 70 - 74 years [ ] 75 - 79 years [ ] 80 - 84 years
[ ] 85 - 89 years [ ] 90 years or more

17. What kind of periodic driver re-examination would you favor for older drivers? (Check all that apply)
[ ] Eye test
[ ] Total physical examination
[ ] Written test
[ ] Driving (road) test
[ ] All of the above
[ ] None of the above
[ ] Comment: _____

18. Would periodic reexamination make you feel nervous or threatened?
[ ] Yes [ ] No

KNOWLEDGE ASSESSMENT

19. If your car goes into a skid, you should:
[ ] pump the brakes
[ ] apply the brakes firmly
[ ] avoid using the brakes
[ ] put your car into neutral

20. In which situation do you have the right-of-way?
[ ] when entering a controlled route
[ ] when already in a traffic circle
[ ] when approaching a merging traffic sign
[ ] when entering a street or highway from a driveway

21. If two vehicles arrive at an uncontrolled intersection at the same time from different directions, who should yield the right-of-way?
[ ] the vehicle on the left
[ ] the vehicle on the right
[ ] either vehicle
[ ] the slowest moving vehicle

22. When you see a sign shaped like the one above, you will probably see it:
[ ] before entering a narrow bridge
[ ] on the left side of the road
[ ] on the back of a slow moving vehicle
[ ] just before a curve

23. Depth perception, which is important in knowing when to pass safely:
[ ] increases with age
[ ] remains the same with age
[ ] decreases with age
[ ] increases significantly with age

24. Drivers age 60 and over compared with drivers age 30-50 are involved in:
[ ] more than their share of accidents per mile
[ ] an equivalent share of accidents per mile
[ ] less than their share of accidents per mile
[ ] it varies each year

25. An icy road is most slippery at what temperature?
[ ] 32 [ ] 25 [ ] 10 [ ] 0 degrees Fahrenheit

26. What should you do when driving in the rain?
[ ] reduce speed and increase following distance
[ ] maintain speed with vehicle ahead
[ ] reduce speed and reduce following distance
[ ] vary speed to dry out brakes

27. Where might you see a sign shaped like the one above?
[ ] on the right side of the road in a No Passing zone
[ ] on the left side of the road in a No Passing zone
[ ] before very sharp curves in the road
[ ] on roads where there is restricted travel

28. If you are driving through residential streets lined with tall shrubs and hidden driveways and no sidewalks, what should you do?
[ ] keep an eye on the rearview mirror for cars trying to pass you
[ ] slow down and beep your horn at pedestrians walking along the side of the road
[ ] drive down the center of the street to improve visibility
[ ] drive slowly and continually search the environment for potential hazards

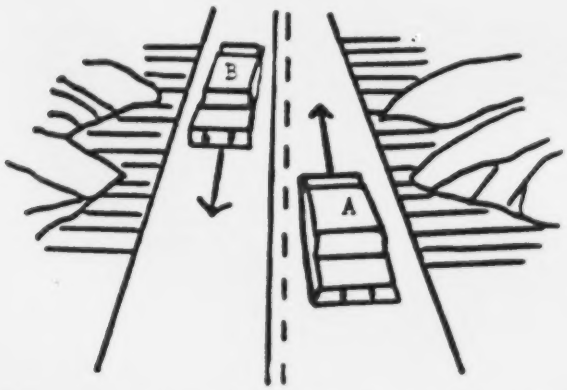
29. What should a driver do if the minimum speed limit on a freeway or highway is too fast for him?
[ ] use the freeway only during non-rush hours and in daylight
[ ] stay to the right and drive very cautiously by keeping an eye on the rearview mirrors
[ ] keep off the freeway and select an alternate route
[ ] stay in the right lane and use the emergency flashers

30. When entering a controlled access highway (turnpike or freeway), what should you do?
[ ] accelerate to the traffic speed and enter highway by merging with traffic at the safest point
[ ] stop at the end of the entrance ramp and look for an opening in the traffic
[ ] proceed slowly and enter expressway when safe, trying not to stop
[ ] because you have the right-of-way, accelerate to the traffic speed and enter the highway quickly

31. If you miss your exit on an Interstate, you should do what?
[ ] turn around at the first U-turn for emergency vehicles area
[ ] go on to the next exit
[ ] wait till the highway is clear and then back up
[ ] stop and back up on the shoulder with your flashers on

32. When rounding a left curve your vehicle tends to do what?
[ ] move to the inside of the lane
[ ] stay in the center of the lane
[ ] move to the outside of the lane
[ ] speed up

33. Why should smoking be avoided when driving at night?
[ ] the light from the cigarette can reflect in the windshield
[ ] it can impair night vision
[ ] you can start a fire in the car
[ ] smoking presents no hazard when driving



34. A road like the one pictured above means that:
[ ] car A can pass whenever it is safe
[ ] car B can pass whenever it is safe
[ ] passing is prohibited in both directions
[ ] either car is permitted to pass

35. The best way to increase visibility when backing up is by:
[ ] looking in the rearview mirror
[ ] looking in both the rearview and side mirrors
[ ] leaning your head out the window
[ ] turning around and looking out the rear window

36. How may eyeglasses adversely affect vision during driving?
[ ] eyeglasses with heavy temples (side pieces) can restrict side vision
[ ] glare from oncoming headlights at night will reflect into the eyes
[ ] if the glasses slip, they can block the eyes
[ ] eyeglasses do not adversely affect driving

37. Very slow driving is especially dangerous in which of the following situations?
[ ] when approaching the crest of a hill
[ ] just after passing the crest of a hill
[ ] when making a U-turn
[ ] when making a right turn

38. If you are planning to make a left turn across an intersection and you are waiting in the middle of the intersection for a break in oncoming traffic, which way should your front tires be turned?
[ ] to the left
[ ] it depends upon the sharpness of the turn
[ ] straight ahead
[ ] to the right

39. What do you do when you are exiting a controlled access highway (turnpike or freeway)?
[ ] slow down after you enter the deceleration lane
[ ] slow down before you enter the deceleration lane
[ ] start to brake as soon as you signal your intentions to exit
[ ] it is optional whether you signal your exit as long as you are in the lane closest to the exit

40. If you take medication before driving a long distance, what is the most important thing for you to do?
[ ] have another person ride with you
[ ] be sure to eat a light meal
[ ] plan on making several rest stops along the way
[ ] find out the effects of the medication

41. What measure should the driver age 55 and over use in following the vehicle ahead?
[ ] 1 car length for ten miles per hour you are traveling
[ ] 2 second following distance
[ ] 3 second following distance
[ ] 10 feet for every ten miles per hour you are traveling

42. You want to change lanes. You can see if a car is in your blind spot:
[ ] only if you check your rearview mirror
[ ] only if you check your sideview mirror
[ ] only if you turn and glance over your shoulder
[ ] only if you check both mirrors

43. Making good use of all mirrors on a car is especially important for those drivers who:
[ ] have peripheral vision
[ ] have hearing problems
[ ] drive a lot at night
[ ] are driving unfamiliar cars

44. What temporary visual condition can occur from drinking alcohol?
[ ] reduced side vision
[ ] blurring
[ ] seeing double
[ ] all of the above
[ ] none of the above

45. The blood alcohol level at which a driver is assumed to be "under the influence" is .10% in some states. For a 155 pound man to reach this level on an empty stomach, the amount of whiskey he would probably have to drink within one hour is:
[ ] 3 ounces
[ ] 6 ounces
[ ] 9 ounces
[ ] 12 ounces
[ ] 15 ounces

46. Alcohol is a factor in approximately what percentage of traffic deaths?
[ ] 10% [ ] 20% [ ] 30% [ ] 40% [ ] 50%

47. As you drink more alcohol, your ability to drive:
[ ] steadily improves
[ ] improves at first, but then gets worse
[ ] may get better or worse, depending on certain factors
[ ] worsens at first, but then gets better
[ ] steadily worsens

48. For each one ounce drink of whiskey, a person should wait before driving:
[ ] 15 minutes [ ] 30 minutes [ ] 1 hour
[ ] 2 hours [ ] 3 hours

49. Which will "sober you up" if you want to drive?
[ ] black coffee
[ ] a cold shower
[ ] time
[ ] vigorous exercise
[ ] all of the above

APPENDIX C

COMPREHENSIVE OLDER DRIVER ASSESSMENT (CODA) PROGRAM*

ADMINISTRATION INFORMATION

Agency #:_____ Site #: _____ Subject #: _____

Date: ____/____/____ Interviewer #: _____ [ ] Pre [X] Post

ATTITUDES ASSESSMENT

1. Do you think a driver's license is a privilege or a right granted to all qualified individuals?
   [ ] It is a right [ ] It is a privilege [ ] I don't care which

2. What do you think about the national maximum speed limit of 55 miles per hour?
   [ ] It is just right
   [ ] It should be increased
   [ ] It should be decreased

3. Do you think it is safe to drive way below the posted speed limit (e.g. 40 MPH in a 55 MPH zone)?
   [ ] Yes [ ] No

4. Do you believe traffic accidents are mainly:
   [ ] under your control
   [ ] due to chance or luck
   [ ] due to circumstances beyond your control

5. Would you be willing to take a driver education, training or retraining course?
   [ ] Yes [ ] No

6. The judgmental abilities of drivers aged at least 55 tend to be poorer than those of drivers below age 40.
   [ ] Strongly agree [ ] Slightly agree
   [ ] Neutral
   [ ] Slightly disagree [ ] Strongly disagree

7. The reaction time of most drivers aged at least 55 tends to be slower than the reaction time of drivers below age 40.
   [ ] Strongly agree [ ] Slightly agree
   [ ] Neutral
   [ ] Slightly disagree [ ] Strongly disagree

8. It is almost impossible for drivers aged 55 and over to learn and use anything new to improve traffic safety.
   [ ] Strongly agree [ ] Slightly agree
   [ ] Neutral
   [ ] Slightly disagree [ ] Strongly disagree

9. In comparison to yourself five years ago, are you a:
   [ ] Better driver [ ] About the same [ ] Worse driver

10. Five years from now, do you believe you will be a:
   [ ] Better driver [ ] About the same [ ] Worse driver

11. At about what age do you estimate you would no longer **wish** to drive an automobile?
   [ ] 55 - 59 years [ ] 60 - 64 years
   [ ] 65 - 69 years [ ] 70 - 74 years
   [ ] 75 - 79 years [ ] 80 - 84 years
   [ ] 85 - 89 years [ ] 90 years or more

12. At about what age do you estimate you would no longer **be able** to drive an automobile safely?
   [ ] 55 - 59 years [ ] 60 - 64 years
   [ ] 65 - 69 years [ ] 70 - 74 years
   [ ] 75 - 79 years [ ] 80 - 84 years
   [ ] 85 - 89 years [ ] 90 years or more

13. Who should make the decision about when it is time to give up driving? (Check all that apply)
   [ ] Driver himself/herself [ ] Family member(s)
   [ ] Doctor(s) [ ] Motor vehicle department
   [ ] Police department [ ] Other: _____

14. Is age alone a good basis for determining when it is time to give up driving?
   [ ] Yes [ ] No

15. If not, what other things should be considered? (Check all that apply)
   [ ] Driver's health [ ] Accident record
   [ ] Need for mobility [ ] Other available transportation
   [ ] Other: _____

16. At what age do you think older drivers should be required to renew their licenses through reexamination?
   [ ] No specific age requirement
   (same re-examination requirements as for younger drivers)
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17. What kind of periodic driver re-examination would you favor for older drivers? (Check all that apply)
[ ] Eye test
[ ] Total physical examination
[ ] Written test
[ ] Driving (road) test
[ ] All of the above
[ ] None of the above
[ ] Comment: _____

18. Would periodic reexamination make you feel nervous or threatened?
[ ] Yes [ ] No

KNOWLEDGE ASSESSMENT

19. If your car goes into a skid, you should:
[ ] pump the brakes
[ ] apply the brakes firmly
[ ] avoid using the brakes
[ ] put your car into neutral

20. In which situation do you have the right-of-way?
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21. If two vehicles arrive at an uncontrolled intersection at the same time from different directions, who should yield the right-of-way?
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22. When you see a sign shaped like the one above, you will probably see it:
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    [ ] drive down the center of the street to improve visibility
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29. What should a driver do if the minimum speed limit on a freeway or highway is too fast for him?
    [ ] use the freeway only during non-rush hours and in daylight
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32. When rounding a left curve your vehicle tends to do what?
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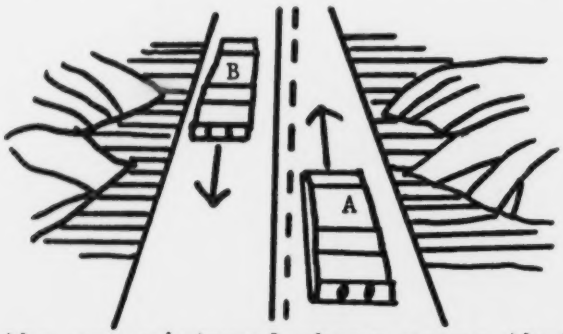
[ ] stay in the center of the lane
[ ] move to the outside of the lane
[ ] speed up

33. Why should smoking be avoided when driving at night?
[ ] the light from the cigarette can reflect in the windshield
[ ] it can impair night vision
[ ] you can start a fire in the car
[ ] smoking presents no hazard when driving



34. A road like the one pictured above means that:
[ ] car A can pass whenever it is safe
[ ] car B can pass whenever it is safe
[ ] passing is prohibited in both directions
[ ] either car is permitted to pass

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[ ] looking in the rearview mirror
[ ] looking in both the rearview and side mirrors
[ ] leaning your head out the window
[ ] turning around and looking out the rear window

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[ ] glare from oncoming headlights at night will reflect into the eyes
[ ] if the glasses slip, they can block the eyes
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37. Very slow driving is especially dangerous in which of the following situations?
[ ] when approaching the crest of a hill
[ ] just after passing the crest of a hill
[ ] when making a U-turn
[ ] when making a right turn

38. If you are planning to make a left turn across an intersection and you are waiting in the middle of the intersection for a break in oncoming traffic, which way should your front tires be turned?
[ ] to the left
[ ] it depends upon the sharpness of the turn
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39. What do you do when you are exiting a controlled access highway (turnpike or freeway)?
[ ] slow down after you enter the deceleration lane
[ ] slow down before you enter the deceleration lane
[ ] start to brake as soon as you signal your intentions to exit
[ ] it is optional whether you signal your exit as long as you are in the lane closest to the exit

40. If you take medication before driving a long distance, what is the most important thing for you to do?
[ ] have another person ride with you
[ ] be sure to eat a light meal
[ ] plan on making several rest stops along the way
[ ] find out the effects of the medication

41. What measure should the driver age 55 and over use in following the vehicle ahead?
[ ] 1 car length for ten miles per hour you are traveling
[ ] 2 second following distance
[ ] 3 second following distance
[ ] 10 feet for every ten miles per hour you are traveling

42. You want to change lanes. You can see if a car is in your blind spot:
[ ] only if you check your rearview mirror
[ ] only if you check your sideview mirror
[ ] only if you turn and glance over your shoulder
[ ] only if you check both mirrors

43. Making good use of all mirrors on a car is especially important for those drivers who:
[ ] have peripheral vision
[ ] have hearing problems
[ ] drive a lot at night
[ ] are driving unfamiliar cars

44. What temporary visual condition can occur from drinking alcohol?
[ ] reduced side vision
[ ] blurring
[ ] seeing double
[ ] all of the above
[ ] none of the above

45. The blood alcohol level at which a driver is assumed to be "under the influence" is .10% in some states. For a 155 pound man to reach this level on an empty stomach, the amount of whiskey he would probably have to drink within one hour is:
[ ] 3 ounces
[ ] 6 ounces
[ ] 9 ounces
[ ] 12 ounces
[ ] 15 ounces

46. Alcohol is a factor in approximately what percentage of traffic deaths?
[ ] 10% [ ] 20% [ ] 30% [ ] 40% [ ] 50%

47. As you drink more alcohol, your ability to drive:
[ ] steadily improves
[ ] improves at first, but then gets worse
[ ] may get better or worse, depending on certain factors
[ ] worsens at first, but then gets better
[ ] steadily worsens

48. For each one ounce drink of whiskey, a person should wait before driving:
[ ] 15 minutes [ ] 30 minutes [ ] 1 hour
[ ] 2 hours [ ] 3 hours

49. Which will "sober you up" if you want to drive?
[ ] black coffee
[ ] a cold shower
[ ] time
[ ] vigorous exercise
[ ] all of the above